

(19) World Intellectual Property Organization
International Bureau

02 JUL 2004

(43) International Publication Date
31 July 2003 (31.07.2003)

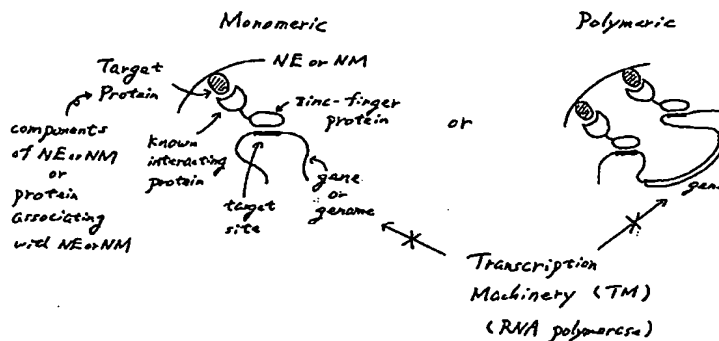
PCT

(10) International Publication Number
WO 03/062447 A2

- (51) International Patent Classification⁷: C12Q (74) Agents: WILSON, M., Lisa et al.; Hale and Dorr LLP, 300 Park Avenue, New York, NY 10022-7402 (US).
- (21) International Application Number: PCT/US03/01529
- (22) International Filing Date: 17 January 2003 (17.01.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/350,163 18 January 2002 (18.01.2002) US
60/351,315 23 January 2002 (23.01.2002) US
- (71) Applicant (for all designated States except US): SYNGENTA PARTICIPATIONS AG [CH/CH]; Schwarzwaldallee 215, CH-4058 Basel (CH).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): SERA, Takashi [JP/US]; 7624 Palmilla Drive, #79, San Diego, CA 92122 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: NUCLEAR-ENVELOPE AND NUCLEAR-LAMINA BINDING CHIMERAS FOR MODULATING GENE EXPRESSION

*New Strategy for Repression**~ Fixation of Target Genes to Nuclear Scaffolds
through Zinc-Finger Proteins**For example: to Nuclear Matrix (NM)
and/or
to Nuclear Envelope (NE).*

(57) Abstract: The present invention is directed to nucleic acid target-specific chimeric proteins comprising a nuclear-envelope and/or nuclear-lamina binding domain and a DNA binding domain. These proteins, as well as the nucleic acids encoding those proteins, can be used in methods to repress or down-regulate expression of selected genes. The DNA binding domains are preferably from naturally-occurring zinc finger proteins (ZFPs) or artificial zinc finger proteins (AZPs). Molecular switch systems for gene regulation are also provided.

WO 03/062447 A2



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.